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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/571,610	01/12/2007	Takeshi Mizuno	NAG-0128	4813
23353 7590 09/14/2010 RADER FISHMAN & GRAUER PLLC LION BUILDING 1233 20TH STREET N.W., SUITE 501 WASHINGTON, DC 20036				
EXAMINER				
BURCH, MELODY M				
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3657				
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09/14/2010		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/571,610

**Applicant(s)**

MIZUNO ET AL.

**Examiner**

Melody M. Burch

**Art Unit**

3657

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 31-49 is/are pending in the application.
- 4a) Of the above claim(s) 39 and 43-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 31-38, 40-42 and 46-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 31-49 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 3/10/06
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

1. Claims 39 and 43-45 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 7/2/10.
2. Applicant's election with traverse of species 2 as best understood since Applicant describes the species as being directed to figures 3-5 in the reply filed on 7/2/10 is acknowledged. The traversal is on the ground(s) that unity of invention principles and not restriction practice is applicable in this case. This argument is not found persuasive because unity of invention principles were utilized in this case as evident from paragraph 1 of the election requirement. Examiner notes that the species do not involve the same special technical features since they employ distinct structures to achieve vibration isolation. Examiner also notes here that claim 39 has also been withdrawn since it recites the halves and the tie members which are associated with the embodiment of figure 10, 21 as described in paragraph [0112] of the instant published application.

The requirement is still deemed proper and is therefore made FINAL.

***Priority***

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

4. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. In particular, Examiner has found no reference identified as publication of unexamined patent application no. 81498-2002 mentioned on pg. 16 of the instant specification.

***Drawings***

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitation of the combination of pneumatic springs being the load supporter with the vibration arrangement recited in claims 31 and 32 from which claim 36 depends and the limitation of the series supporters or springs arranged with the first member, the second member, and the base as recited in claim 48 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. Figures 20 and 21 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

7. In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37

CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 33, 35, 38, 42, and 46-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re: claims 33 and 35. The phrase "said spring elements" is indefinite. The phrase suggests that Applicant intends to refer back to the spring elements of K1 recited in claim 31, but the drawings suggest that the spring elements recited in claims 33 and 35 refer to spring elements other than the K1 elements.

Re: claim 38. The phrase "said load" lacks proper antecedent basis in the claim.

Re: claim 42. The phrases "the actuator" and "the controller" lack proper antecedent basis in the claim.

Re: claim 42. The phrase "the supporter with specified negative spring characteristics" is confusing in light of the fact that the supporter is recited as having positive spring characteristics in claim 31.

Re: claim 48. The phrase "the second member" lacks proper antecedent basis in the claim.

Re: claims 48 and 49. The phrase "the base" lacks proper antecedent basis in the claim as well as the phrase "the springs" in claim 49.

The remaining claims are indefinite due to their dependency from claim 42.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 31 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6354576 to Jacobs et al. in view of EP-0391066 (EP'066).

Re: claims 31 and 48. Jacobs et al. show in figure 2 an apparatus for vibration isolation comprising: an intermediate plate 26 supported on a base 18 by at least one spring element 28 with spring characteristics; a vibration isolating table 20 supported on the intermediate plate 26; and a load supporter 34 with spring characteristics between the vibration isolating table 20 and the base 18.

Jacobs et al. are silent with regards to the at least one spring being a plurality of spring elements and are silent with regards to the spring characteristics specifically being positive spring characteristics.

In *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) the court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced.

EP'066 teaches in lines 1-3 of the abstract the use of a vibration isolation apparatus in which the spring elements have positive spring characteristics and the magnetic springs have negative spring characteristics.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the spring characteristics of the spring elements of Jacobs et al. to have been positive, as taught by EP'066, in order to provide a particular means of effecting the vibration isolation depending on the application and the type of vibration to be damped. With regards to claim 48 the two series supporters or springs 22 and 28.

12. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6788386 to Cox et al. in view of EP-0391066 (EP'066).

Re: claim 31. Cox et al. show in figure 5 an apparatus for vibration isolation comprising: an intermediate plate 14a supported on a base 11 by spring elements 16 with spring characteristics; a vibration isolating table 10 supported on the intermediate plate 14a; and a load supporter 12 as labeled in figure 3 with spring characteristics between the vibration isolating table 10 and the base 11.

Cox et al. are silent with regards to the spring characteristics specifically being positive spring characteristics.

EP'066 teaches in lines 1-3 of the abstract the use of a vibration isolation apparatus in which the spring elements have positive spring characteristics and the magnetic springs have negative spring characteristics.



It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the spring characteristics of the spring elements of Cox et al. to have been positive, as taught by EP'066, in order to provide a particular means of effecting the vibration isolation depending on the application and the type of vibration to be damped.

13. Claims 32, 33, 35-37, 40-42, 46, 47, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6788386 to Cox et al. in view of EP-0391066 (EP'066) as applied to claim 31 above, and further in view of JP-200281489 (JP'498).

Re: claims 32, 40-42, 46, 47, and 49. Cox et al., as modified, teach in Cox et al. the limitation wherein the vibration isolating table supported on the intermediate plate by an actuator 15 which is suggested by Cox et al. to be magnetically actuated in one embodiment. EP'066 teaches the limitation of a magnetic actuator with zero power characteristics and negative spring characteristics and permanent magnets 6a, 6b in lines 2-4 of the abstract, but Cox et al., as modified, are silent with regards to the magnetic mechanism having electromagnets.

JP'498 teaches in the English abstract the use of an actuator for supporting a vibration isolating table on an intermediate plate being in the form of a magnetic levitation mechanism with zero-power characteristics and with permanent and electromagnets.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the actuator of Cox et al., as modified, to have been a magnetic levitation mechanisms, as taught by JP'498, in order to provide a

functionally equivalent means of supporting the vibration isolating table on the intermediate plate and achieving high vibration resistance.

Re: claim 33. Cox et al., as modified, include a parallel arrangement of components to support the vibration isolating table on the intermediate plate with one of the components being the magnetic levitation mechanism, but are silent with regards to the limitation wherein the support is by the spring elements with positive spring characteristics arranged in parallel with the magnetic levitation mechanism.

JP'498 teaches in figure 1 the limitation wherein a vibration isolating table 2 is supported with respect to the intermediate plate shown above 1 by at least one spring element 5 arranged in parallel with a magnetic levitation mechanism 1, 3, 4.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the vibration isolating table of Cox et al., as modified, to have been supported on the intermediate plate by the spring elements, as best understood, with positive spring characteristics arranged in parallel with the magnetic levitation mechanism, in view of the teachings of JP'498, in order to provide a means of providing high vibration resistance.

Re: claims 35 and 37. Cox et al., as modified, include the limitation wherein the load supporter includes the spring elements 12 (also see *In re Harza*) with positive spring characteristics, as best understood, arranged in parallel, but is silent with regards to a damper being in parallel with the spring elements.

JP'498 teaches in figure 12 the use of at least one spring element 111 being in parallel with a damper 112.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the spring element arrangement of the load supporter of Cox et al., as modified, to have been in parallel with a damper, in view of the teachings of JP'498, in order to provide a means of damping excessive oscillations resulting from the resilient support arrangement for improved control.

Re: claim 36. See col. 8 lines 3-7 of Cox et al.

14. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6788386 to Cox et al. in view of EP-0391066 (EP'066) and JP-200281489 (JP'498) as applied to claim 32 above, and further in view of US Patent 6354576 to Jacob et al.

Cox et al., as modified, include the intermediate plate being supported on the base by two components arranged in parallel but are silent with regards to at least one of the components being a linear actuator.

Jacob et al. teach in figure 2 a vibration isolation apparatus wherein the intermediate plate 26 is supported on the base 18 by two components arranged in parallel with one of which being a linear actuator 30.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified at least one of the components of Cox et al., as modified to have included a linear actuator, as taught by Jacob et al., in order to provide a means of introducing a force producing member to provide active vibration isolation.

15. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6788386 to Cox et al. in view of EP-0391066 (EP'066) and JP-200281489

(JP'498) as applied to claim 32 above, and further in view of US Patent 4811667 to Morishita et al.

Cox et al., as modified, are silent with regards to the limitation wherein the attraction of the electromagnets of the magnetic levitation mechanism is adapted to be variable with changes in the load acting on the vibration isolating table.

Morishita et al. teach in col. 5 lines 57-61 the limitation wherein the attraction of the electromagnets of the magnetic levitation mechanism is adapted to be variable with changes in the load acting on the vibration isolating table.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the attraction of the electromagnets of Cox et al., as modified, to have been adapted to be variable with changes in the load acting on the vibration isolating table, as taught by Morishita et al., in order to provide a means of maintaining floating even in the midst of disturbances.

### ***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents 5433422 to Ross et al., 6752250 to Tanner, 7726452 to Kraner teach the use of vibration isolation devices having a vibration isolation table, a base, an intermediate plate, a load supporter, components between the base and intermediate plate, and components between the intermediate plate and vibration isolation table, 3145012 to Kfoury teach the use of a similar vibration isolation device except there is no component between the intermediate plate and table, finally JP-

5302641 teaches the use of a vibration isolation device having a magnetic mechanism with electromagnets and resilient components.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 571-272-7114. The examiner can normally be reached on Monday-Friday (6:30 AM-3:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on 571-272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

mmb  
September 11, 2010

/Melody M. Burch/  
Primary Examiner, Art Unit 3657